

Name: _____

Date: _____

A2&T: Solving Rational Equations

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Do Now

1) Solve for x : $\left(\frac{1}{25}\right)^{2x} = 125^{x-1}$

2) Express in simplest radical form, in terms of i : $\sqrt{-72x^3y^5z^4}$

3) Express in simplest radical form: $\sqrt[3]{27a^7b^8c^2d^9}$

Rational equations take on two forms:

A] A Proportion:

$$\frac{2x}{x-2} = \frac{3x}{x+1}$$

B] Three Or More Terms:

Solve for x: $\frac{6}{3x} + \frac{5}{4} = \frac{3}{x}$

Examples:

$$\frac{2x}{x-1} + \frac{x-5}{x^2-1} = 1$$

$$\frac{x}{x^2-4} = \frac{2}{x^2-x-6}$$

SOLVING RATIONAL EQUATIONS WITH THREE OR MORE TERMS:

- I. Factor the denominators.
- II. State the LCD and the restrictions.
- III. Multiply the numerator of every term by the whole LCD.
- IV. Cross out any factors that are common to the numerator and denominator of each term.
- V. Expand and collect like terms.
- VI. Solve for x .